Appendix H: Elkhart Brass Nozzle Testing Report

ELKHART BRASS
FIRE FIGHTING EQUIPMENT A SAFE FLEET BRAND

1302 West Beardsley Ave. | Elkhart, IN 46514 | 574 . 295 . 8330 | www.elkhartbrass.com

Subject: Howard County (Maryland) Fire Department Nozzle Investigation

Date: February 15, 2019

Prepared by: Chris Martin, Municipal Product Manager / Testing conducted by Chris Martin, Municipal Product Manager and Kile Swearengin, Engineering Technician

The following is the summary of the findings of the testing of an Elkhart Brass Combination Fog nozzle related to a fire incident resulting in the death of a Howard County Fire Department member on July 23, 2018.

Nozzle Model Identification:
The nozzle received was a Model 4000-24 Chief Fixed Flow Combination Fog Nozzle Tip rated for a 200 gpm @ 75 psi flow rate. The tip was affixed to a Model B-275A ball shutoff with a 1-3/8" waterway. Both were stamped with the letter code "EE" which refers to the year of manufacture which was 2006 (Image 21-22).

Initial Nozzle Observations upon receipt:
Nozzle was in a wide fog pattern and was covered with debris commonly found in firefighting including what appeared to be some drywall material that was on caked on parts of the nozzle including the swivel and side of the shutoff. It arrived to us in the closed position (Image 5) and was also photographed in the open position (Image 6). Images 1-15 are of the nozzle as it was received to us except for Image 6 as noted.

Test Results:
The nozzle was affixed to our flow test stand in the pattern position that it arrived to us. The stream pattern was positioned in wide fog and the angle was calculated with a protractor to reveal an approximate angle of 133 degrees. (Image 16-17)

The nozzle was brought up to a pressure of 75 psi at the nozzle inlet base and the output flow was 227 gpm. (Image 18)

The nozzle moved freely from straight stream to full fog, and into the flush position OK. (Image 19)

The shutoff moved freely and no leaks were observed when the nozzle was in a closed position with pressure behind it. (Image 20)

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Image 1

Image 2

Image 3

Image 4

Image 5

Image 6

Image 8

Image 9

Image 10

Image 11

Image 12

Image 13

Image 14

Image 15

Image 16

Image 17

Image 18

Image 19

Image 20

Image 21

Image 22